

Name: _____ Period: _____ Date: _____

Factoring Guess & Check

$$a x^2 + b x + c$$

$$b = (A + B) \quad c = A \cdot B$$

$$1^{\text{st}} \text{ Term: } a x^2$$

$$2^{\text{nd}} \text{ Term: } b x$$

$$3^{\text{rd}} \text{ Term } c$$

$$(+1)(+1) = (+1)$$

$$(-1)(-1) = (+1)$$

$$(-1)(+1) = (-1)$$

$$(+1)(-1) = (-1)$$

1. $x^2 + 2x - 8$

$(A+B)$	$[A \cdot B]$	Use
$1+8$	$1 \cdot 8$	
$2+4$	$2 \cdot 4$	$-2 \& 4$

$(x+A)(x+B)$
 $(x-2)(x+4)$

Check using FOIL: $x^2 + 4x - 2x - 8$
 $x^2 + 2x - 8$

1. Notice the third term, c , is negative, therefore

$$-c = -A \cdot B \quad \text{Or} \quad -c = A \cdot -B$$

One of the factors must be negative.

2.1 Find the factors of the 3rd term, c .

$$c = A \cdot B$$

$$-8 = 1 \cdot 8$$

$$-8 = 2 \cdot 4$$

2.2 Find the set that adds to the 2nd term, b , by guessing.

$$A + B = b$$

$$-1 + 8 = 7 \neq +2 \text{ incorrect}$$

$$1 + -8 = -7 \neq +2 \text{ incorrect}$$

$$-2 + 4 = +2 \text{ Correct}$$

3. $x^2 - 20x + 125$

$(A+B)$	$[A \cdot B]$	Use
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Check using FOIL:

4. $x^2 - 30x - 125$

$(A+B)$	$[A \cdot B]$	Use
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Check using FOIL:

5. $x^2 + 28x + 180$

$(A+B)$ $[A \cdot B]$ Use

Check using FOIL:

6. $x^2 + 10x - 180$

$(A+B)$ $[A \cdot B]$ Use

Check using FOIL:

9. $x^2 - 6x - 135$

$(A+B)$ $[A \cdot B]$ Use

Check using FOIL:

10. $x^2 - 24x + 135$

$(A+B)$ $[A \cdot B]$ Use

Check using FOIL: